BEA B200901411PL

STURGIS MUNICIPAL WELLS
308 N. PROSPECT STREET
STURGIS, MI 49091
PART 201 - ST. JOSEPH COUNTY
BEA COMPLETED 09/04/09

BASELINE ENVIRONMENTAL ASSESSMENT CONDUCTED PURSUANT TO SECTION 20126(1)(c) OF 1994 PA 451, PART 201, AS AMENDED AND THE RULES PROMULGATED THEREUNDER

for

308 NORTH PROSPECT STREET
Sturgis, Michigan

PREPARED FOR:
Kirsch Lofts LLC

September 4, 2009
Project No. 0481.02644.0

ROSE & WESTRA, INC.
ENVIRONMENTAL CONSULTANTS

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IDENTIFICATION OF AUTHOR AND DATE BEA WAS CONDUCTED AND DATE BEA WAS COMPLETED

This Baseline Environmental Assessment (BEA) was conducted on August 23, 2009 and completed on September 4, 2009 by Mr. Mark Westra of Rose & Westra, Inc. (R&W). Mr. Westra's resume and R&W's Company Profile are presented in Appendix BEA-A.

Mark A. Westra

INTRODUCTION

Kirsch Lofts LLC purchased one parcel of real estate commonly known as 308 North Prospect Street, Sturgis, St. Joseph County, Michigan (the Property) on July 10, 2009. The City of Sturgis is located in the southwestern portion of Michigan's lower peninsula. The center of the City of Sturgis is approximately 3.0 miles north of the Michigan/Indiana border. The Property itself is located approximately three blocks east of M-66 (North Nottawa Street) and three blocks north of US-12 (East Chicago Road). North Prospect Street runs north-south. The Property is situated along the western side of Prospect Street immediately south of the Michigan Southern Railroad railroad right-of-way. Rose & Westra, Inc. (R&W) updated a prior Phase I Environmental Site Assessment (ESA) for the Property in July 2009. This ESA, which has been included in Appendix BEA-B, contains a Location Map as Figure 1. A legal description of the Property has been included as Appendix BEA-C.

Kirsch Lofts LLC intends to redevelop the Property for mixed commercial and residential use. These likely include apartments, commercial office space, and retail stores. Ancillary operations will include vehicle parking and a swimming pool. There is no planned use and/or storage of significant quantities of hazardous substances as defined by Rule 299.5901 of the Michigan Administrative Code.

While portions of the Property were formerly occupied by residential homes, the majority of the Property was part of the Kirsch Company Plant #1. Kirsch Company manufactured curtain rods, brackets, blinds, and related hardware. These operations included wood and metal working, degreasing, finishing, etc. Kirsch Company continued its operations on the Property until circa 1998. Soil and groundwater contamination associated with these historical operations is well documented.

Kirsch Lofts LLC retained R&W to prepare this BEA for the Property in accordance with Section 20126(1)(c) of the Michigan Natural Resources and Environmental Protection Act (NREPA). This BEA is intended to meet the standards for a Category 'N' BEA as presented in the *Instructions for Preparing and Disclosing Baseline Environmental Assessments and Section 7a Compliance Analyses to the Michigan Department of Environmental Quality and for Requesting Optional Determinations* issued by the Michigan Department of Environmental Quality (MDEQ), dated March 11, 1999. Category 'N' BEAs are appropriate for sites where no future significant hazardous substance use is anticipated.

This BEA consists of the following:

1. A July 10, 2009 Phase I ESA for the Property. This report was used to document the historical use of the Property as required by the MDEQ. A copy of this report is presented in Appendix BEA-B. The Phase I ESA is also intended to meet one of the requirements for Kirsch Lofts LLC to qualify for the Bonafide Prospective Purchaser liability protection under 42 U.S.C. §9607(r).

2. Compilation and evaluation of prior environmental testing performed on the Property.

3. Investigation into some areas known and suspected to have been affected by historical releases of hazardous substances. This included soil sampling and chemical analysis.

4. Interviews with Mr. Scott T. Bosgraaf, a representative of Kirsch Lofts LLC, to characterize the intended hazardous substance use.

Collection and analysis of soil samples from the Property confirmed releases of hazardous substances associated with the historical uses of the Property. The results of the sampling and chemical analyses confirm that the Property is a "Facility" as defined by Part 201 of the NREPA, as amended.

PROPERTY DESCRIPTION & INTENDED HAZARDOUS SUBSTANCE USE

Kirsch Lofts LLC purchased the Property on July 10, 2009. Kirsch Lofts LLC intends to redevelop the Property for mixed commercial & residential use.

Property Description

The Property is situated at the northwest corner of North Prospect and East Hatch Streets and is irregular in shape. The long axis runs east-west, parallel to Hatch Street. The total area of the Property is approximately 3.7 acres. The permanent parcel number (PPN) for the Property is 75-052-200-024-00. The Property is improved with two buildings, as well as asphalt parking areas, drives, and landscaping. The vacant manufacturing building is located on the eastern portion of the Property. The groundwater treatment building is located in the north-central portion of the Property. The groundwater treatment building houses equipment for the ongoing groundwater remediation for the Sturgis Municipal Well Field Superfund remediation (i.e., equipment to support an air stripping tower and associated air pollution control equipment).

The primary land use in the vicinity of the Property is residential with some commercial (contractor's office and yard) and light industrial (fuel distribution) along the eastern side of North Prospect Street.

Photographs of the Property have been included in Appendix M of the Phase I ESA which is found in Appendix BEA-B. The date of the photographs and the name of the photographer are presented on the photograph pages.

R&W did not identify any prior BEAs for the Property.

Intended Hazardous Substance Use

Kirsch Lofts LLC intends to remodel the buildings for mixed commercial & residential use. Kirsch Lofts LLC has not identified all future tenants; however, based on its intended redevelopment, there is no reason to believe there will be material use or storage of hazardous substances or petroleum products. While the construction and maintenance of the building will involve the transient use of hazardous substances (paints, oils, etc.), such use will be similar to residential or commercial office construction and, therefore, will not result in significant hazardous substance use as defined by Part 201.

Significant hazardous substance use refers to the use, storage, handling or management, at any time, of hazardous substances in quantities that exceed those commonly used for typical residential or office purposes. Rule 901(o) states that this does not include gasoline,

oil, or other vehicle fluids that are contained in vehicles traversing or parked at a property on a short-term basis. Therefore, this BEA is being conducted as Category 'N'.

Note that while Kirsch Lofts LLC and its tenants will not use or store significant quantities of hazardous substances or petroleum products, such products may be used to maintain the groundwater extraction and treatment system located on the Property. These activities are allowed per an easement in favor of Kirsch, Inc. a potentially responsible party (PRP) responsible for remediation of the Sturgis Well Field National Priority List (NPL) contamination. Note that Kirsch Lofts LLC has no affiliation, contract, or ownership in common with Kirsch, Inc. Kirsch Lofts LLC does not derive any financial benefit from these activities and has no control over these activities, therefore, the use of any hazardous substances by Kirsch, Inc., for the remedial actions on the Property is not considered in this BEA.

KNOWN CONTAMINATION

This section of the BEA has been prepared to document the existence of soil contamination at the Property above the Part 201 Generic Residential Cleanup Criteria (GRCC) as established by the MDEQ. The Chemical Abstract Service (CAS) numbers for all identified contaminants are presented on the data summary tables.

Pathway Analysis

The drinking water protection (DWP), groundwater contact protection (GCP), soil volatilization to indoor air inhalation (SVIAI), particulate soil inhalation (PSI), and direct contact (DC) exposure pathways are all applicable, relevant, and either complete or potentially complete. Based on the depth to groundwater and distance to the downgradient nearest surface water body, it is unlikely that the groundwater-surface water interface and protection of the groundwater-surface water interface pathways are complete. Therefore, these are not considered in this BEA.

Prior Documentation of Contamination

As part of the Phase I ESA R&W viewed the Superfund files maintained at the Sturgis Public Library (Sturgis, Michigan). These files indicated that the operations on the Property were formerly known as Wilhem Furniture Company and Royal Easy (chair company). Soil gas sampling conducted in 1988 and 1989 identified concentrations of TCE, PCE, and their breakdown components on the Property. These detections were along the northern Property boundary and south of the southern wing of the manufacturing building. Since these samples were taken nearly 20 years ago and there are no enforceable cleanup criteria for soil gas, these are presented only for background information and are not being used to document the current condition of the Property or to demonstrate that it is a "facility".

Two groundwater monitoring wells were installed on the Property for the Superfund investigation. Concentrations of solvents in the groundwater have been decreasing for over the last ten years due to the capture and treatment system. Soil samples were taken during the installation of these wells. Boring logs, a map, and analytical results for these samples are also presented in Appendix BEA-E. The results confirm the presence of chlorinated solvents in soil in the courtyard portion of the Property. ERE (2008) reported that soil vapor extraction was performed in this area to remove most of the solvent contamination. As in the case of the soil gas data, the groundwater data is provided for background information only.

In August 2008, ERE reportedly collected 14 soil samples (one from each boring) performed at the Property. (Refer to Appendix BEA-D for a data summary table and sample location map). Six samples were selected for VOC testing, four for PNA testing, and three for the RCRA 8 metals testing (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver), and two were tested for arsenic and chromium only (one sample was analyzed for both VOCs and metals). Arsenic, benzo(a)fluoranthene, benzo(a)pyrene, dibenzo(ah)anthracene, and indeno(1,2,3-cd)pyrene were identified above DC as well as phenanthrene, tetrachloroethene, and trichloroethene (TCE) above DWP. Given the relative recent sampling, the concentrations found, the slow degradation/migration rates of these compounds, R&W believes these samples reasonably characterize the Property at the date of transfer and therefore do demonstrate the Property is a "facility".

Sampling Methodology

On November 6, 2008, R&W performed soil sampling at the Property. The purpose of this investigation was to confirm or refute the presence of TCE in soil at concentrations above SVIAI near ERE boring SB-11 and to assess if TCE, PCE, or other VOCs were present in the vicinity of ERE boring SB-11 and former lacquer and paint storage areas.

B.E.S.T. Environmental Drilling of Okemos, Michigan performed the drilling. B.E.S.T. used a Simco Earthprobe 200 direct push drilling rig to complete the drilling inside the building and two of the exterior borings (GP-12 and GP-13) and a Geoprobe 6600 direct-push drilling rig to complete SB-14 (where no sample was collected for chemical analysis). Drilling was completed by continuously advancing two-inch-diameter Macro-core® samplers from the ground surface. Recovered soil was field screened using a MiniRAE 2000 Photo-ionization Detector (PID) for the presence of volatile organic compounds (VOCs).

Ten soil borings were advanced up to 29 feet (ft) to facilitate the collection of soil samples for chemical analyses. Seven borings (GP-1, GP-2, GP-3, GP-4, GP-7, GP-8, and GP-10) were located in the manufacturing building and three borings (GP-12, GP-13, and GP-14) were located in a courtyard between the wings of the manufacturing building. Refer to Figure 1 for the boring locations and Appendix G of the Phase I ESA for the boring logs.

The PID detected VOCs in borings GP-2, GP-3, GP-7, GP-8, GP-10, GP-12 and GP-14. Soil samples were collected from depths where the PID detected the presence of VOCs, from soil exhibiting visual evidence of potential contamination, or from soil where contamination might occur. No samples for chemical analyses were collected from GP-14.

Sample containers were labeled and placed in a chilled cooler under chain-of-custody procedures. Samples were taken to Bio-Chem Environmental Analytical Laboratory

(Bio-Chem) in Grand Rapids, Michigan for chemical analysis. Ten soil samples were analyzed for VOCs, semivolatile organic compounds (SVOCs), and Michigan 18 heavy metals (antimony, arsenic, barium, beryllium, cadmium, chromium cobalt, copper, iron, fine and coarse lead fraction, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium and zinc). Aliquots collected for VOC analyses were field preserved with methanol.

Upon completion, borings were backfilled with a mixture of soil cuttings and Hole Plug® bentonite. All down-hole tools were decontaminated using Liquinox and water wash followed by water rinse. Soil borings were located relative to the building on the Property.

Analytical Methods

The analytes and method references utilized by Bio-Chem are presented on the laboratory reports included in Appendix J of the Phase I ESA.

Investigation Results

Soils encountered during the drilling were typically fill soil (typically sand or sand containing ashes, brick fragments, cinders, glass fragments, or concrete fragments), up to 5.2 ft thick (GP-10) overlying fine to coarse sand and gravels. Silty clay was encountered in borings GP-1 (4.7-12.0 ft), GP-2 (3.0-4.3 ft), and GP-8 (2.7-3.2 ft). Groundwater was not encountered in any boring.

TCE was detected above DWP in samples collected from GP-1 (110 µg/kg), GP-3 (2,600 µg/kg), GP-4 (1,600 µg/kg), GP-7 (1,000 µg/kg), and GP-8 (1,600 µg/kg), GP-12 (6,300 µg/kg) and GP-13 (5,100 µg/kg). TCE was not encountered at concentrations above SVIAI in any boring, including GP-12 and GP-13 which were performed in close proximity ERE boring SB-11 where soil reportedly did contain TCE above SVIAI.

Tetrachloroethylene was detected above DWP in samples collected from borings GP-12 (300 µg/kg) and GP-13 (280 µg/kg).

Semivolatile organic compounds were detected in the sample collected at GP-12. All SVOCs were detected below the GRCC for DC and DWP.

Iron was detected at a concentration of 13,000,000 µg/kg in the samples from collected from GP-1 and GP-3, above it's GRCC for DWP.

Abandoned Containers

No abandoned ASTs, USTs, or abandoned or discarded barrels, containers, or other receptacles containing hazardous substances have been identified on the Property. Boiler treatment chemicals described in the Phase I were removed prior to the date this BEA was completed.

Facility Status

The presence of arsenic, benzo(a)fluoranthene, benzo(a)pyrene, dibenzo(ah)anthracene, and indeno(1,2,3-cd)pyrene, iron, phenanthrene, PCE, and TCE in soil above their respective GRCC for DC and/or DWP document that the Property is a "facility" as defined by MCL.20101(o).

LIKELIHOOD OF OTHER CONTAMINATION

Given the long history of manufacturing including coating (painting), chromating, and metal operations at the Property, other metals, solvents, oils, and paint constituents could be present on the Property. ERE identified acenapthalene, fluoranthene, fluorene, naphthalene, and selenium above the GRCC for protection of the groundwater surface water interface criteria. Similarly, R&W identified copper, fluoranthene, mercury, phenanthrene, selenium, and zinc above the GRCC for protection of the groundwater surface water interface criteria. While R&W believes it is unlikely that this exposure pathway is complete, it is possible that higher concentrations of these hazardous substances may be present on the Property. Other hazardous substances were also detected in soil (refer to Table 1 and Appendix J of the Phase I ESA), these compounds could also be present in soil at concentrations above GRCC in other locations.

Since a limited number of samples were collected at the Property and only a limited number of compounds were measured by the laboratory, the soil and groundwater testing conducted may not have identified all areas of contamination or all hazardous substances at the Property. Therefore, R&W cannot rule out the presence of other hazardous substances on the Property or the presence of those compounds measured at other locations on the Property. Since no significant future use of hazardous substances is planned, the presence of other hazardous substances would not affect the basis of this BEA.

BEA RATIONALE AND CONCLUSIONS

The presence of arsenic, benzo(a)fluoranthene, benzo(a)pyrene, dibenzo(ah)anthracene, and indeno(1,2,3-cd)pyrene, iron, phenanthrene, PCE, and TCE in soil above their respective GRCC for DC and/or DWP document that the Property is a "facility" as defined by MCL.20101(o).

Kirsch Lofts LLC intends redevelop the Property for mixed commercial and residential use. Therefore, this BEA was prepared using Category 'N' standards. There will be no significant hazardous substance use at the Property, and this is the basis for being able to distinguish existing contamination from a new release.

REFERENCES

Bio-Chem Environmental Analytical Laboratories. November 14,2008. *Analytical Results (Order No. 0811047).* Grand Rapids, Michigan.

Bosgraaf, S. 2009. Personal Communication. Grand Haven, Michigan.

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Michigan Department of Environmental Quality. 1999. *Instructions for Preparing and Disclosing Baseline Environmental Assessments and Section 7a Compliance Analyses to the Michigan Department of Environmental Quality and for Requesting Optional Determinations.* Environmental Response Division. Lansing, Michigan.

Rose & Westra, Inc. July 10, 2009. *Phase I Environmental Site Assessment, 308 North Prospect Street and 415 East Main Street, Sturgis, St. Joseph County, Michigan.* Sturgis, Michigan.

State of Michigan. 1995. *Natural Resources and Environmental Protection Act.* Lansing, Michigan.

ANALYTICAL DATA
Street
an

Soil Samples									
GP-1	GP-1	GP-2	GP-3	GP-4	GP-7	GP-8	GP-10	GP-12	GP-13
4.9-5.4 ft	13.2-13..9 ft.	2.5-3.0 ft.	4.0-4.7 ft.	1.5-2.7 ft.	2.5-3.0 ft.	6.7-7.2 ft.	5.4-6.1 ft.	2.3-2.5 ft.	1.0-1.5 ft.
11/6/2008	11/6/2008	11/6/2008	11/6/2008	11/6/2008	11/6/2008	11/6/2008	11/6/2008	11/6/2008	11/6/2008
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TABLE 1: SUMMARY OF S
308 North Pros
Sturgi

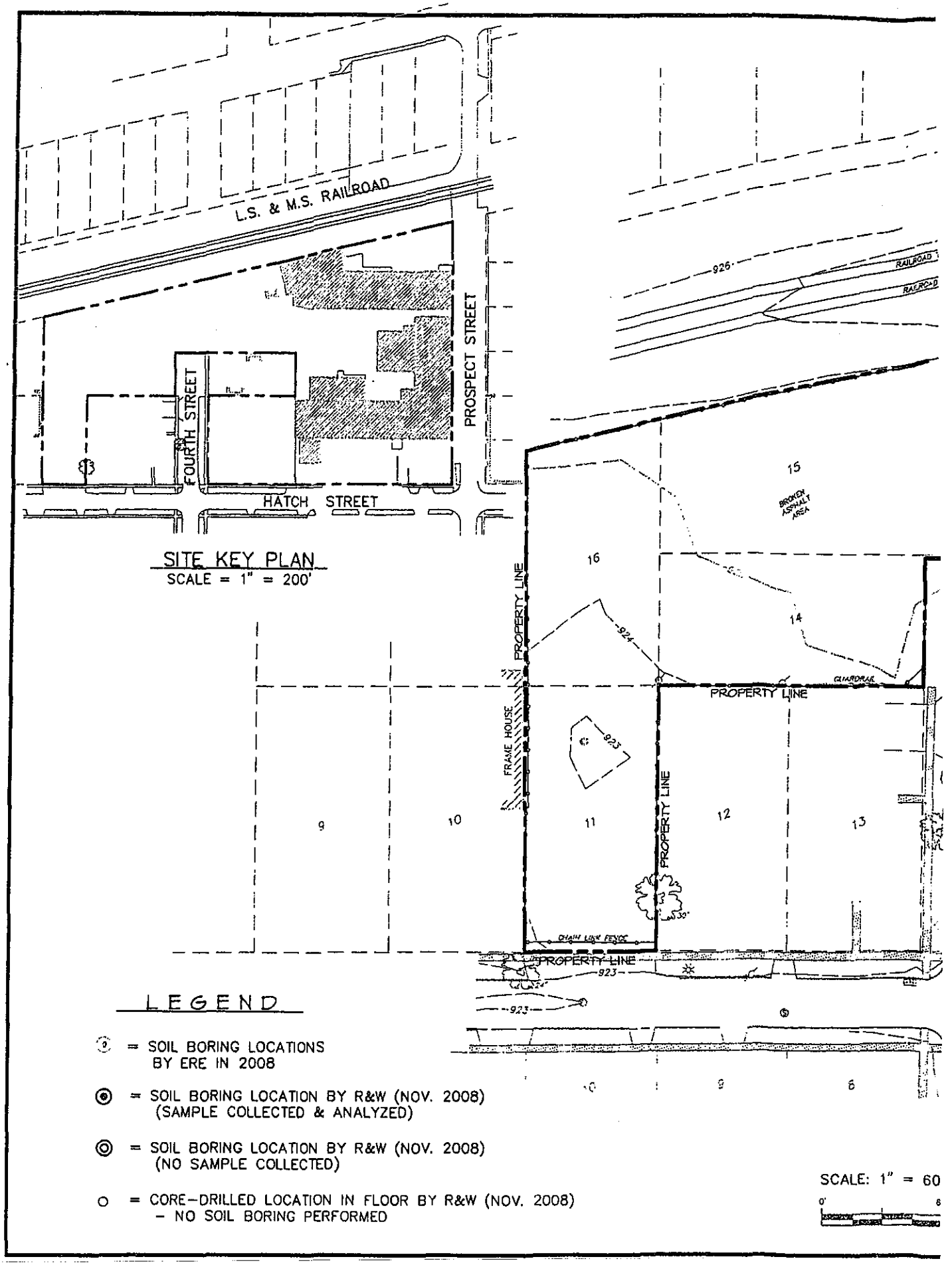
	Hazardous Substance Information			Groundwater Protection			Indoor Air	Ambient Air (Y)	Direct Contact	
	Hazardous Substance	Chemical Abstract Service (CAS) Number	Statewide Default Background Levels (SDBL)	Residential Drinking Water Protection Criteria (DWPC)	Groundwater Surface Water Interface Protection Criteria (GSIC)	Groundwater Contact Protection Criteria (GCPC)	Soil Volatilization to Indoor Air Inhalation Criteria (SVIAC)	Infinite Source Volatile Soil Inhalation Criteria (VSIC)	Direct Contact Criteria (DCC)	Soil Satur Concentr Screen Levels (C
Volatile Organic Compounds	1,1,1-Trichloroethane	71556	NA	4,000	4,000	4.6E+5 (C)	2.5E+5	3.8E+6	4.6E+5 (C)	4.6E+
	1,1,2,2-Tetrachloroethane	79345	NA	170	1,600 (X)	94,000	4,300	10,000	53,000	8.7E+
	1,1,2-Trichloroethane	79005	NA	100	6,600 (X)	4.2E+5	4,600	17,000	1.8E+5	9.2E+
	1,1-Dichloroethane	75343	NA	18,000	15,000	8.9E+5 (C)	2.3E+5	2.1E+6	8.9E+5 (C)	8.9E+
	1,1-Dichloroethylene (I)	75354	NA	140	1,300 (X)	2.2E+5	62	1,100	2.0E+5	5.7E+
	1,2,4-Trichlorobenzene	120821	NA	4,200	1,800	1.1E+6	1.1E+6 (C)	2.8E+7	9.9E+5 (DD)	1.1E+
	1,2,4-Trimethylbenzene (I)	95636	NA	2,100	570	1.1E+5 (C)	1.1E+5 (C)	2.1E+7	1.1E+5 (C)	1.1E+
	Ethylene dibromide	106934	NA	20 (M)	20 (M)	500	670	1,700	92	8.9E+
	1,2-Dichlorobenzene	95501	NA	14,000	360	2.1E+5 (C)	2.1E+5 (C)	3.9E+7	2.1E+5 (C)	2.1E+
	1,2-Dichloroethane (I)	107062	NA	100	7,200 (X)	3.8E+5	2,100	6,200	91,000	1.2E+
	1,2-Dichloropropane (I)	78875	NA	100	5,800 (X)	3.2E+5	4,000	25,000	1.4E+5	5.5E+
	1,3,5-Trimethylbenzene (I)	108678	NA	1,800	1,100	94,000 (C)	94,000 (C)	1.6E+7	94,000 (C)	94,000
	1,3-Dichlorobenzene	541731	NA	170	1,100	51,000	ID	ID	1.7E+5 (C)	1.7E+
	1,4-Dichlorobenzene	106467	NA	1,700	290	1.4E+5	19,000	77,000	4.0E+5	NA
	Benzene (I)	71432	NA	100	4,000 (X)	2.2E+5	1,600	13,000	1.8E+5	4.0E+
	Bromodichloromethane	75274	NA	1,600 (W)	ID	2.8E+5	1,200	9,100	1.1E+5	1.5E+
	Bromoform	75252	NA	1,600 (W)	ID	8.7E+5 (C)	1.5E+5	9.0E+5	8.2E+5	8.7E+
	Bromomethane	74839	NA	200	700	1.4E+6	860	11,000	3.2E+5	2.2E+
	Carbon tetrachloride	56235	NA	100	900 (X)	92,000	190	3,500	96,000	3.9E+
	Chlorobenzene (I)	108907	NA	2,000	940	2.6E+5 (C)	1.2E+5	7.7E+5	2.6E+5 (C)	2.6E+
	Chloroethane	75003	NA	8,600	ID	9.5E+5 (C)	9.5E+5 (C)	3.0E+7	9.5E+5 (C)	9.5E+
	Chloroform	67663	NA	1,600 (W)	3,400 (X)	1.5E+6 (C)	7,200	45,000	1.2E+6	1.5E+
	Chloromethane (I)	74873	NA	5,200	ID	1.1E+6 (C)	2,300	40,000	1.1E+6 (C)	1.1E+
	cis-1,2-Dichloroethylene	156592	NA	1,400	12,000	6.4E+5 (C)	22,000	1.8E+5	6.4E+5 (C)	6.4E+
	cis-1,3-Dichloropropene	10061015	NA	NA	NA	NA	NA	NA	NA	NA
	Dibromochloromethane	124481	NA	1,600 (W)	ID	3.6E+5	3,900	24,000	1.1E+5	6.1E+
	Ethylbenzene (I)	100414	NA	1,500	360	1.4E+5 (C)	87,000	7.2E+5	1.4E+5 (C)	1.4E+
	Methyl-tert-butyl ether (MTBE)	1634044	NA	800	15,000 (X)	5.9E+6 (C)	5.9E+6 (C)	2.5E+7	1.5E+8	5.9E+
	Methylene chloride	75092	NA	100	19,000 (X)	2.3E+6 (C)	45,000	2.1E+5	1.3E+6	
	Tetrachloroethylene	127184	NA	100	900 (X)	88,000 (C)	11,000	1.8E+5	88,000 (C)	
	Toluene (I)	108883	NA	16,000	2,800	2.5E+5 (C)	2.5E+5 (C)	2.8E+6	2.5E+5 (C)	
	trans-1,2-Dichloroethylene	156605	NA	2,000	30,000	1.4E+6 (C)	23,000	2.8E+5	1.4E+6 (C)	1.4E+6
	trans-1,3-Dichloropropene	10061026	NA	NA	NA	NA	NA	NA	NA	NA
	Trichloroethylene	79016	NA	100	4,000 (X)	4.4E+5	7,100	78,000	5.0E+5 (C,DD)	5.0E+5
	Trichlorofluoromethane	75694	NA	52,000	NA	5.6E+5 (C)	5.6E+5 (C)	9.2E+7	5.6E+5 (C)	5.6E+
	Vinyl chloride	75014	NA	40	300	20,000	270	4,200	3,800	4.9E+
	Xylenes (I)	1330207	NA	5,600	700	1.5E+5 (C)	1.5E+5 (C)	4.6E+7	1.5E+5 (C)	1.5E+
Semivolatile Compounds	2,4,5-Trichlorophenol	95954	NA	39,000	NA	9.1E+6	NLV	NLV	2.3E+7	NA
	2,4,6-Trichlorophenol	88062	NA	2,400	NA	2.0E+5	NLV	NLV	7.1E+5	NA
	2,4-Dichlorophenol	120832	NA	1,500	380	9.6E+5	NLV	NLV	6.6E+5 (DD)	1.8E+6
	2,4-Dimethylphenol	105679	NA	7,400	7,600	1.0E+7	NLV	NLV	1.1E+7	NA
	2,4-Dinitrophenol	51285	NA	NA	NA	NA	NA	NA	NA	NA
	2,4-Dinitrotoluene	121142	NA	430	NA	1.7E+5	NLV	NLV	48,000	NA
	2,6-Dinitrotoluene	606202	NA	NA	NA	NA	NA	NA	NA	NA
	2-Chlorophenol	95578	NA	900	440	1.9E+6	ID	ID	1.4E+6	1.9E+7
	2-Methylnaphthalene	91576	NA	57,000	ID	5.5E+6	ID	ID	8.1E+6	NA
	2-Methylphenol	95487	NA	NA	NA	NA	NA	NA	NA	NA
	2-Nitroaniline	88744	NA	NA	NA	NA	NA	NA	NA	NA
	2-Nitrophenol	88755	NA	400	ID	1.6E+6	NLV	NLV	6.3E+5	NA
	3,3'-Dichlorobenzidine	91941	NA	2,000 (M)	2,000 (M,X)	4,600	NLV	NLV	6,600	NA
	3-Nitroaniline	99092	NA	NA	NA	NA	NA	NA	NA	NA
	4-Bromophenyl phenyl ether	101553	NA	NA	NA	NA	NA	NA	NA	NA
	4-Chloro-3-methylphenol	59507	NA	5,800	280	3.0E+6	NLV	NLV	4.5E+6	NA
	4-Chloroaniline	106478	NA	NA	NA	NA	NA	NA	NA	NA
	4-Nitroaniline	100016	NA	NA	NA	NA	NA	NA	NA	NA
	4-Nitrophenol	100027	NA	NA	NA	NA	NA	NA	NA	NA
	Acenaphthene	83329	NA	3.0E+5	4,400	9.7E+5	1.9E+8	8.1E+7	4.1E+7	NA
	Acenaphthylene	208968	NA	5,900	ID	4.4E+5	1.6E+6	2.2E+6	1.6E+6	NA
	Anthracene	120127	NA	41,000	ID	41,000	1.0E+9 (D)	1.4E+9	2.3E+8	NA
	Benzo(a)anthracene (Q)	56553	NA	NLL	NLL	NLL	NLV	NLV	20,000	NA
	Benzo(a)pyrene (Q)	50328	NA	NLL	NLL	NLL	NLV	NLV	2,000	NA
	Benzo(b)fluoranthene (Q)	205992	NA	NLL	NLL	NLL	ID	ID	20,000	NA
	Benzo(g,h,i)perylene	191242	NA	NLL	NLL	NLL	NLV	NLV	2.5E+6	NA
	Benzo(k)fluoranthene (Q)	207089	NA	NLL	NLL	NLL	NLV	NLV	2.0E+5	NA
	Bis(2-chloroethoxy)methane	111911	NA	NA	NA	NA	NA	NA	NA	

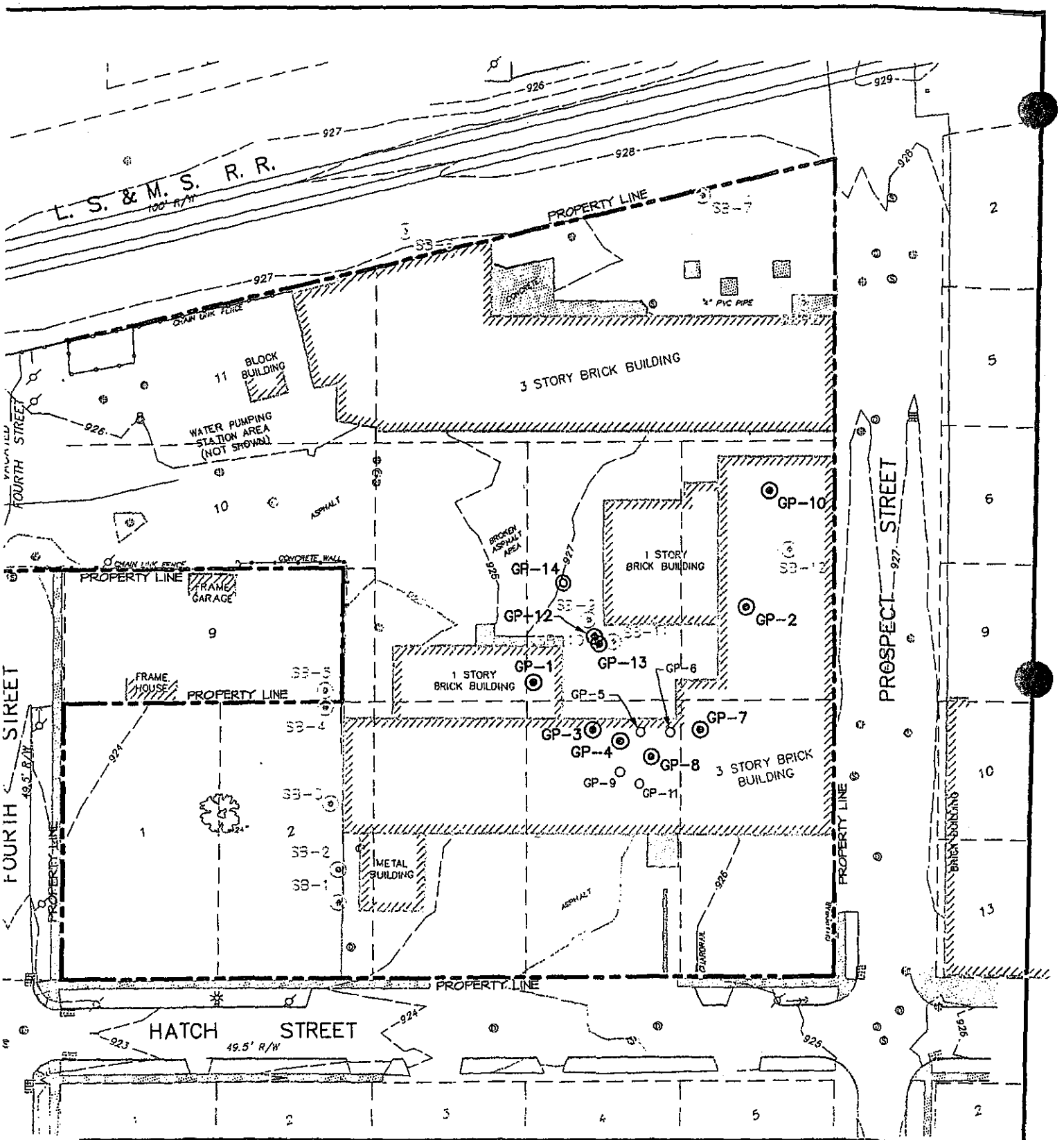
TABLE 1: SUMMAI
308 No
Sti

	Hazardous Substance Information			Groundwater Protection			Indoor Air	Ambient Air (Y)	Direc
	Hazardous Substance	Chemical Abstract Service (CAS) Number	Statewide Default Background Levels (SDBL)	Residential Drinking Water Protection Criteria (DWPC)	Groundwater Surface Water Interface Protection Criteria (GSIC)	Groundwater Contact Protection Criteria (GCPC)	Soil Volatilization to Indoor Air Inhalation Criteria (SVIAC)	Infinite Source Volatile Soil Inhalation Criteria (VSIC)	Direct Contact Criteria (DCC)
Semivolatile Compounds	bis(2-Chloroethyl)ether (I)	111444	NA	100	300	1.1E+5	8,300	3,800	13,000
	bis(2-Ethylhexyl)phthalate	117817	NA	NLL	NLL	NLL	NLV	NLV	2.8E+6
	Butyl benzyl phthalate	85687	NA	3.1E+5 (C)	26,000 (X)	3.1E+5 (C)	NLV	NLV	3.1E+5 (C)
	Chrysene (O)	218019	NA	NLL	NLL	NLL	ID	ID	2.0E+6
	Dibenzo(a,h)anthracene (O)	53703	NA	NLL	NLL	NLL	NLV	NLV	2,000
	Dibenzofuran	132649	NA	ID	1,700	ID	ID	ID	ID
	Diethyl phthalate	84662	NA	1.1E+5	2,200	7.4E+5 (C)	NLV	NLV	7.4E+5 (C)
	Dimethyl phthalate	131113	NA	7.9E+5 (C)	NA	7.9E+5 (C)	NLV	NLV	7.9E+5 (C)
	Di-n-butyl phthalate	84742	NA	7.6E+5 (C)	11,000	7.6E+5 (C)	NLV	NLV	7.6E+5 (C)
	Di-n-octyl phthalate	117840	NA	1.0E+8	ID	1.4E+8 (C)	NLV	NLV	6.9E+6
	Fluoranthene	206440	NA	7.3E+5	5,500	7.3E+5	1.0E+9 (D)	7.4E+8	4.6E+7
	Fluorene	86737	NA	3.9E+5	5,300	8.9E+5	5.8E+8	1.3E+8	2.7E+7
	Hexachlorobenzene (C-66)	118741	NA	1,800	350	8,200	41,000	17,000	8,900
	Hexachlorobutadiene (C-46)	87683	NA	26,000	91	3.5E+5 (C)	1.3E+5	1.3E+5	1.0E+5
	Hexachlorocyclopentadiene (C-56)	77474	NA	3.2E+5	ID	7.2E+5 (C)	30,000	50,000	7.2E+5 (C)
	Hexachloroethane	67721	NA	430	1,800 (X)	1.1E+5	40,000	5.5E+5	2.3E+5
	Indeno(1,2,3-cd)pyrene (O)	193395	NA	NLL	NLL	NLL	NLV	NLV	20,000
	Isophorone	78591	NA	15,000	11,000 (X)	2.4E+6 (C)	NLV	NLV	2.4E+6 (C)
	Naphthalene	91203	NA	35,000	870	2.1E+6	2.5E+5	3.0E+5	1.6E+7
	Nitrobenzene (I)	98953	NA	330 (M)	3,600 (X)	2.2E+5	91,000	54,000	1.0E+5
	n-Nitroso-di-n-propylamine	621647	NA	330 (M)	NA	7,200	NLV	NLV	1,200
	N-Nitrosodiphenylamine	86306	NA	5,400	NA	7.0E+5	NLV	NLV	1.7E+6
	Pentachlorophenol	87865	NA	22	27,000 (G,X)	4,300	NLV	NLV	90,000
	Phenanthrene	85018	NA	56,000	5,300	1.1E+6	2.8E+6	1.6E+5	1.6E+6
	Phenol	108952	NA	88,000	4,200	1.2E+7 (C)	NLV	NLV	1.2E+7 (C,DD)
	Pyrene	129000	NA	4.8E+5	ID	4.8E+5	1.0E+9 (D)	6.5E+8	2.9E+7
Table 3 Metals (Michigan 18)	Antimony	7440360	NA	4,300	94,000	4.9E+7	NLV	NLV	1.8E+5
	Arsenic (B)	7440382	5,800	4,600	70,000 (X)	2.0E+6	NLV	NLV	7,600
	Barium (B)	7440393	75,000	1.3E+6	4.4E+5 (G,X)	1.0E+9 (D)	NLV	NLV	3.7E+7
	Beryllium	7440417	NA	51,000	84,000 (G)	1.0E+9 (D)	NLV	NLV	4.1E+5
	Cadmium (B)	7440439	1,200	6,000	3,600 (G,X)	2.3E+8	NLV	NLV	5.5E+5
	Chromium (total) (B,H)	Varies	18,000 (total)	30,000	3,300	1.4E+8	NLV	NLV	2.5E+6
	Cobalt	7440484	6,800	800	2,000	4.8E+7	NLV	NLV	2.6E+6
	Copper (B)	7440508	32,000	5.8E+6	73,000 (G)	1.0E+9 (D)	NLV	NLV	2.0E+7
	Iron (B)	7439896	1.2E+7	6,000	NA	1.0E+9 (D)	NLV	NLV	1.6E+8
	Lead (B) - Total	7439921	21,000	7.0E+5	2.8E+6 (G,X)	ID	NLV	NLV	NA
	Mercury (total) (B,Z)	7439976	130	1,700	50 (M)	47,000	48,000	52,000	1.6E+5
	Molybdenum (B)	7439987	NA	1,500	16,000 (X)	1.9E+7	NLV	NLV	2.6E+6
	Nickel (B)	7440020	20,000	1.0E+5	76,000 (G)	1.0E+9 (D)	NLV	NLV	4.0E+7
	Selenium (B)	7782492	410	4,000	400	7.8E+7	NLV	NLV	2.6E+6
	Silver (B)	7440224	1,000	4,500	100 (M)	2.0E+8	NLV	NLV	2.5E+6
	Thallium (B)	7440280	NA	2,300	4,200 (X)	1.5E+7	NLV	NLV	35,000
	Vanadium	7440622	NA	72,000	1.9E+5	1.0E+9 (D)	NLV	NLV	7.5E+5 (DD)
	Zinc (B)	7440666	47,000	2.4E+6	1.7E+5 (G)	1.0E+9 (D)	NLV	NLV	1.7E+8

: SOIL ANALYTICAL DATA
rospect Street
Michigan

:t	Soil Samples									
Saturation centration reening is (CSAT)	GP-1 4.9-5.4 ft 11/6/2008	GP-1 13.2-13..9 ft. 11/6/2008	GP-2 2.5-3.0 ft. 11/6/2008	GP-3 4.0-4.7 ft. 11/6/2008	GP-4 1.5-2.7 ft. 11/6/2008	GP-7 2.5-3.0 ft. 11/6/2008	GP-8 6.7-7.2 ft. 11/6/2008	GP-10 5.4-6.1 ft. 11/6/2008	GP-12 2.3-2.5 ft. 11/6/2008	GP-13 1.0-1.5 ft. 11/6/2008
.2E+6	<330	<330	<330	<330	<330	<330	<330	NT	<330	<330
.0E+7	<330	<330	<330	<330	<330	<330	<330	NT	<330	<330
.1E+5	<330	<330	<330	<330	<330	<330	<330	NT	<330	<330
NA	<330	<330	<330	<330	<330	<330	<330	NT	5200	<330
NA	<330	<330	<330	<330	<330	<330	<330	NT	990	<330
NA	<330	<330	<330	<330	<330	<330	<330	NT	850	<330
.4E+5	<330	<330	<330	<330	<330	<330	<330	NT	<330	<330
.9E+5	<330	<330	<330	<330	<330	<330	<330	NT	<330	<330
.6E+5	<330	<330	<330	<330	<330	<330	<330	NT	1600	<330
.4E+8	<330	<330	<330	<330	<330	<330	<330	NT	<330	<330
NA	<330	<330	<330	<330	<330	<330	<330	NT	10,000	<330
NA	<330	<330	<330	<330	<330	<330	<330	NT	1500	<330
NA	<330	<330	<330	<330	<330	<330	<330	NT	<330	<330
.5E+5	<330	<330	<330	<330	<330	<330	<330	NT	<330	<330
.2E+5	<330	<330	<330	<330	<330	<330	<330	NT	<330	<330
NA	<330	<330	<330	<330	<330	<330	<330	NT	<330	<330
NA	<330	<330	<330	<330	<330	<330	<330	NT	2500	<330
.4E+6	<330	<330	<330	<330	<330	<330	<330	NT	<330	<330
NA	<330	<330	<330	<330	<330	<330	<330	NT	510	<330
.9E+5	<330	<330	<330	<330	<330	<330	<330	NT	<330	<330
.5E+6	<330	<330	<330	<330	<330	<330	<330	NT	<330	<330
NA	<330	<330	<330	<330	<330	<330	<330	NT	<330	<330
NA	<800	<800	<800	<800	<800	<800	<800	NT	<800	<800
NA	<330	<330	<330	<330	<330	<330	<330	NT	10,000	<330
.2E+7	<330	<330	<330	<330	<330	<330	<330	NT	<330	<330
NA	<330	<330	<330	<330	<330	<330	<330	NT	8700	<330
NA	<500	NT	NT	<500	<500	<500	<500	NT	<500	<500
NA	5,000	NT	NT	6,400	4,800	7,300	4,800	NT	5,700	1,500
NA	94,000	NT	NT	120,000	130,000	150,000	130,000	NT	200,000	6,200
NA	410	NT	NT	420	350	320	400	NT	390	490
NA	<200	NT	NT	<200	<200	360	<200	NT	530	<200
NA	12,000	NT	NT	12,000	1,400	12,000	11,000	NT	16,000	4,000
NA	6,100	NT	NT	5,500	4,800	4,800	5,500	NT	4,900	3,000
NA	15,000	NT	NT	15,000	15,000	36,000	11,000	NT	280,000	55,000
NA	13,000,000	NT	NT	13,000,000	12,000,000	11,000,000	12,000,000	NT	12,000,000	2,800,000
NA	22,000	NT	NT	37,000	59,000	160,000	37,000	NT	120,000	12,000
NA	51	NT	NT	180	100	270	<50	NT	<50	<50
NA	<250	NT	NT	<250	250	290	<250	NT	370	860
NA	8,900	NT	NT	9,300	9,700	8,600	8,000	NT	10,000	5,500
NA	<200	NT	NT	410	370	400	360	NT	270	490
NA	<500	NT	NT	<500	<500	<500	<500	TN	<500	<500
NA	<500	NT	NT	<500	<500	<500	<500	TN	<500	<500
NA	22,000	NT	NT	22,000	21,000	18,000	22,000	TN	17,000	13,000
NA	54,000	NT	NT	90,000	86,000	190,000	75,000	TN	250,000	20,000


L.S. & M.S. RAILROAD
PROSPECT STREET
FOURTH STREET
HATCH STREET
926
RAILROAD
RAILROAD
15
BROKEN ASPHALT AREA
16
14
924
GUARDRAIL
PROPERTY LINE
PROPERTY LINE
FRAME HOUSE
923
PROPERTY LINE
9
10
11
12
13
CHAIN LINK FENCE
PROPERTY LINE
923
923
SITE KEY PLAN
SCALE = 1" = 200'
LEGEND
= SOIL BORING LOCATIONS BY ERE IN 2008
= SOIL BORING LOCATION BY R&W (NOV. 2008) (SAMPLE COLLECTED & ANALYZED)
= SOIL BORING LOCATION BY R&W (NOV. 2008) (NO SAMPLE COLLECTED)
= CORE-DRILLED LOCATION IN FLOOR BY R&W (NOV. 2008) - NO SOIL BORING PERFORMED
SCALE: 1" = 60
0'
6



BORING LOCATION PLAN

NORTH ORIENTATION

ROSE & WESTRA, INC.
ENVIRONMENTAL CONSULTANTS
Grand Rapids, Michigan

KIRSCH LOFTS, LLC
308 N. PROSPECT STREET, STURGIS, MICHIGAN
BASELINE ENVIRONMENTAL ASSESSMENT

CREATED BY: KJB APPROVED BY: MAW DATE: 5/7/09 FILE NAME: 026440_BEA_1_F

PROJECT NO. 0481.02644.0

1

FIGURE NO.

TABLE 1: SUMMAF
308 No
Stu

Notes :
All units in ug/Kg (parts per billion).

Underline	= Value exceeds the Residential Drinking Water Protection Criteria.
Bold	= Value exceeds the Groundwater Surface Water Interface Protection Criteria.
Italics	= Value exceeds the Direct Contact Criteria.
NT	= Not Tested
< XXX	= The concentration of the hazardous substance does not exceed its method detection limit (XXX).
ID	= Insufficient data to develop criterion.
NA	= Criterion or value is not available or not applicable.
NLL	= Hazardous substance is not likely to leach under most soil conditions.
NLV	= Hazardous substance is not likely to volatilize under most conditions.
(B)	= Background, as defined in R 299.5701(b), may be substituted if higher than the calculated cleanup criterion.
(C)	= Value presented is a screening level based on the chemical-specific generic soil saturation concentration (Csat) since the calculat
(D)	= Calculated criterion exceeds 100%, hence it is reduced to 100% or 1.0E+9 ppb.
(G)	= Groundwater surface water interface (GSI) criterion depends on the pH or water hardness, or both, of the receiving surface water.
(H)	= Valence-specific chromium data (Cr III and Cr VI) shall be compared to the corresponding valence-specitic cleanup criteria. If anal
(I)	= Hazardous substance may exhibit the characteristic of ignitability as defined in 40 C.F.R. §261.21 (revised as of July 1, 2001).
(M)	= Calculated criterion is below the analytical target detection limit, therefore, the criterion defaults to the target detection limit.
(Q)	= Criteria for carcinogenic polycyclic aromatic hydrocarbons were developed using relative potential potencies to benzo(a)pyrene.
(W)	= Concentrations of trihalomethanes in groundwater shall be added together to determine compliance with the drinking water protecti
(X)	= The groundwater surface water interface (GSI) criterion shown in the generic cleanup criteria tables is not protective for surface wat
(Y)	= Source size modifiers shall be used to determine soil inhalation criteria for ambient air when the source size is not 1/2 acre.
(Z)	= Mercury is typically measured as total mercury. The generic cleanup criteria, however, are based on data for different species of m
(DD)	= Hazardous substance causes developmental effects.

Please refer to the Administrative Rules for Part 201, Environmental Remediation of the Natural Resources and Environmental Protection Act, December 21, 2002 for a more c

SOIL ANALYTICAL DATA
ospect Street
Michigan

based criterion is greater than Csat.

ness of 150 mg CaCO3/L was used to calculate this criteria.
ata are provided for total chromium only, they shall be compared to the cleanup criteria for Cr VI.

ndards.
is used as a drinking water source.

te description of the above items.